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| 10/764,345 | 01/23/2004 | Tie Liu | MS1-1811US | 5777 |

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| EXAMINER | |
|---|---|
| RAVETTI, DANTE | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3685 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/764,345 | LIU ET AL. | |
| | Examiner | Art Unit | |
| | DANTE RAVETTI | 3685 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) *2,3,7,10,11 and 15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-6,8,9,12-14 and 16-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

# DETAILED ACTION

### *Acknowledgements*

1. This communication is in response to a Request for Continued Examination Application No. 10/764,345 filed on January 14, 2009.

2. Claims 1, 4-6, 8-9, 12-14 and 16-18 are currently pending and have been fully examined.

3. Claims 2-3, 7, 10-11 and 15 have been canceled by the Applicant.

4. For the purpose of applying the prior art, PreGrant Publications will be referred to using a four digit number within square brackets, e.g. [0001].

### *Examiner's Comments/Remarks*

5. Clauses (e.g. wherein, whereby, thereby) that merely states the result of the limitation(s) of a claim(s) does not limit the scope of the claim(s).[1]

### *Claim Objections*

6. Claims 4 and 17 are objected to because of the following informalities:

As to claim 4, Applicant recites, "…wherein **t** h of the hashing function…" It is unclear what the "**t**" is suppose to represent. Appropriate correction is required.

As to claim 17, Applicant recites, "…whereinh of the hashing function is…" It will be understood by the Examiner that the Applicant meant "wherein h" and the Applicant seems to be missing a ":" at the end also. The appropriate correction is required.

[1] (Texas Instruments Inc. v. International Trade Commission 26, USPQ2d 1010 (Fed. Cir. 1993); Griffin v. Bertina, 62 USPQ2d 1431 (Fed. Cir. 2002); Amazon.com Inc. v. Barnesandnoble.com Inc., 57 USPQ2d

### *Claim Rejections - 35 USC § 101*

7. 35 U.S.C. §101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 1, 4-6, 8-9, 12 and 18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As to claim 1, the applicant recites, “A processor-readable medium having processor-executable instructions that, when executed by a processor, performs acts comprising.”

However, this is not in proper Beauregard form (e.g. when executed causes a computer to perform the steps of...), also the claim limitation is silent the aspect of “storing" the processor-executable instructions, thereupon. The appropriate correction is required.

Claims 9 and 18 contains similar language or like deficiencies. The appropriate correction is required.

Claims 4-6, 8 and 12 are also rejected for being dependent upon rejected claims 1 and 9. The appropriate correction is required.

### *Claim Rejections - 35 USC § 112, 1st*

9. The following is a quotation of the first paragraph of 35 U.S.C. §112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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1747 (CAFC 2001); A (whereby/wherein) clause that merely states the result of the limitations in the claim adds nothing to the patentability or substance of the claim.

10. Claims 1, 4-6, 8, 9, 11-14 and 16-17 are rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As to claim 1, Applicant recites, "the denominator of the quotient is not one." Applicant's Specification, at the time of filing, did not disclose this feature.

Claim 9 and 13 contains similar language or like deficiencies. The appropriate correction is required.

Claims 4-6, 8, 11-12, 14 and 16-17 are also rejected for being dependent upon rejected claims 1, 9 and 13.

***Claim Rejections - 35 USC § 112, 2nd***

11. The following is a quotation of the second paragraph of 35 U.S.C. §112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 8 and 12 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 8, Applicant recites, "A computer comprising one or more processor-readable media...." One of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The appropriate correction is required.

Claim 12, also contains similar language or like deficiencies. The appropriate correction is required.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. §103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 1, 4-6, 8-9, 12-14, 16 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Venkatesan et al., (US 2004/0001605) ("*Vankatesan*").

**As to claim 1:**

*Vankatesan* teaches substantially as claimed:

obtaining a digital good (See at least [0085]-[0093], Claim 1);

partitioning the digital goods into a plurality of regions (See at least [0085]-[0093], Claim 1);

calculating rational statistics of one or more the regions of the plurality, so that the statistics of a region are representative of the region, wherein the calculating comprises generating the rational statistics of one or more regions of the plurality via a hashing function having a quotient of two weighted, linear, statistical combinations and wherein the rational statistics are semi-global characteristics (See at least [0085]-[0093], Claim 1);

quantizing the rational statistics (See at least [0085]-[0093], Claim 1);

marking the digital good with the quantized rational statistics of the plurality of the regions (See at least [0085]-[0093], Claim 1).

*Vankatesan* does not expressly teach:

the denominator of the quotient is not one;

However, *Vankatesan* does teach, computational equations (See at least pages 5-9) to determine the region area. Therefore, a predictable result of *Vankatesan* would have use the equation on page 7, as a ratio, because ratios assist in the determination of proportions and to make comparisons between two things. [2]

**As to claim 2:**

Canceled by the Applicant

**As to claim 3:**

Canceled by the Applicant

**As to claim 4:**

A medium as recited in claim 1, wherein t h of the hashing function is (See at least pages 5-9);

[2] Ex parte Smith, 83 USPQ2d 1509 (Bd. Pat. App. & Int. 2007); Claims in application for patent on pocket insert for book are obvious in view of combination of two prior art patents, since claims are combinations that merely unite old elements with no change in their respective functions, and which yield predictable results, since neither applicant's specification nor her arguments present any evidence that modifications necessary to effect combinations are uniquely challenging or difficult for person of ordinary skill in art, and since claimed improvement is no more than simple substitution of one known element for another, or mere application of known technique to piece of prior art ready for improvement.

$$h_i = \frac{\sum_{j \in R_i} \alpha_{ij} s_j}{\sum_{j \in R_i} b_{ij} s_j}$$

Where:

- $a_{ij}$ is the $j^{th}$ element of $a_i$ and $a_i$ are a pseudo-random generated weight factors;
- $b_{ij}$ is the $j^{th}$ element of $b_i$ and $b_i$ are a pseudo-random generated weight factors;
- s denotes the digital good of dimension $N \times 1$;
- $R_i$ are the plurality of regions, where $R_i \subseteq \{1,2,...,N\}$.

**As to claim 5:**

*Vankatesan* expressly teaches:

> wherein the partitioning comprises segmenting the digital good in a plurality of overlapping regions (See at least [0092], Claim 2);

**As to claim 6:**

*Vankatesan* expressly teaches:

> wherein the marking comprises embedding a watermark via quantization (See at least [0100], [0106], and Claim 8);

**As to claim 7:**

> Cancelled by the Applicant

**As to claim 8:**

*Vankatesan* expressly teaches:

> A computer comprising one or more processor-readable media as recited in claim 1 (See at least [0002], [0056], [0224], and Claim 10).

**As to claim 9:**

*Vankatesan* expressly teaches:

> obtaining a digital good (See at least [0085]-[0093], Claim 1); and
>
> using quantization (See at least Abstract, [0016], [0044], [0046], [0049], [0062], [0065], [0066], [0189], [0198]-[0199], Figure 7),
>
> marking the digital good with a watermark (See at least [0007], [0014], [0019], [0029]-[0030], [0044], [0046], [0049], [0068], [0076], Figure 1);
>
> wherein such quantization is based upon semi-global characteristics of regions of the digital good (see at least Abstract, [0050], [0069]-[0074], [0092], Claim 23-28, 33),
>
> wherein such semi-global characteristics are generated via a hashing function employing a quotient of at least two weighted linear combinations of statistics of the regions of the digital good (see at least Abstract, [0050], [0069]-[0074], [0092], Claim 23-28, 33).

*Vankatesan* does not expressly teach:

> wherein the denominator of the quotient is not one;

However, *Vankatesan* does teach, computational equations (See at least pages 5-9) to determine the region area. Therefore, a predictable result of *Vankatesan* would have use the equation on page 7, as a ratio, because ratios assist in the determination of proportions and to make comparisons between two things. [3]

[3] Ex parte Smith, 83 USPQ2d 1509 (Bd. Pat. App. & Int. 2007); Claims in application for patent on pocket insert for book are obvious in view of combination of two prior art patents, since claims are combinations that merely unite old elements with no change in their respective functions, and which yield predictable results, since neither applicant's specification nor her arguments present any evidence that modifications

**As to claim 10:**

Cancelled by the Applicant

**As to claim 11:**

Cancelled by the Applicant

**As to claim 12:**

*Vankatesan* expressly teaches:

A computer comprising one or more processor-readable media as recited in claim 9 (See at least [0221], Figure 10, Claim 32);

**As to claim 13:**

*Vankatesan* teaches substantially as claimed:

a partitioner configured to segment a digital good into a plurality of regions (See at least [0085], [0090], [0092]-[0093], [0095], [0098], Claim 40);

a region-statistics calculator configured to calculate rational statistics of one or more of the plurality of regions, wherein the statistics of a region are representative of that region, wherein the region-statistics calculator is further configured to generate the rational statistics of one or more regions of the plurality via a hashing function having a quotient of two weighted, linear, statistical combinations and wherein the rational statistics are semi-global characteristics (See at least [0085], [0098], [0100], [0109]-[0110], Claim 40);

A region quantizer configured to quantize the rational statistics of a region (See at least Claim 40);

A digital-goods watermarker configured to generate a watermarked good using and the quantized rational statistics (See at least Claim 40);

*Vankatesan* does not expressly teach:

the denominator of the quotient is not one;

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necessary to effect combinations are uniquely challenging or difficult for person of ordinary skill in art, and since claimed improvement is no more than simple substitution of one known element for another, or mere application of known technique to piece of prior art ready for improvement.

However, *Vankatesan* does teach, computational equations (See at least pages 5-9) to determine the region area. Therefore, a predictable result of *Vankatesan* would have use the equation on page 7, as a ratio, because ratios assist in the determination of proportions and to make comparisons between two things. [4]

**As to claim 14:**

*Vankatesan* expressly teaches:

> wherein the region statistics is further configured to generate the rational statistics of one or more regions of the plurality via a hashing function (See at least [0098], [0206], [0215]-[0216], Claim 40);

**As to claim 15:**

> Canceled by the Applicant

**As to claim 16:**

*Vankatesan* expressly teaches:

> wherein the partitioner is further configured to segment a digital good into a plurality of overlapping regions (See at least [0030], [0044], [0065], [0073]-[0082], Figure 3, Claim 42);

**As to claim 17:**

A medium as recited in claim 13, whereinh of the hashing function is (See at least pages 5-9);

[4] Ex parte Smith, 83 USPQ2d 1509 (Bd. Pat. App. & Int. 2007); Claims in application for patent on pocket insert for book are obvious in view of combination of two prior art patents, since claims are combinations that merely unite old elements with no change in their respective functions, and which yield predictable results, since neither applicant's specification nor her arguments present any evidence that modifications necessary to effect combinations are uniquely challenging or difficult for person of ordinary skill in art, and since claimed improvement is no more than simple substitution of one known element for another, or mere application of known technique to piece of prior art ready for improvement.

$$h_i = \frac{\sum_{j \in R_i} \alpha_{ij} s_j}{\sum_{j \in R_i} b_{ij} s_j}$$

Where:

- $a_{ij}$ is the $j^{th}$ element of $a_i$ and $a_i$ are a pseudo-random generated weight factors;
- $b_{ij}$ is the $j^{th}$ element of $b_i$ and $b_i$ are a pseudo-random generated weight factors;
- $s$ denotes the digital good of dimension $N \times 1$;
- $R_i$ are the plurality of regions, where $R_i \subseteq \{1,2,\ldots,N\}$.

**As to claim 18:**

*Vankatesan* expressly teaches:

obtaining a digital good, the digital good having content which has perceptual characteristics (See at least [0030], [0044], [0065], [0073]-[0082], Figure 3, Claim 42);

partitioning the digital good into a plurality of regions (See at least [0085]-[0093], Figure 4-6, Claim 1);

wherein the partitioning comprises segmenting the digital good into a plurality of overlapped regions (See at least [0092], Claim 2);

calculating rational statistics of one or more the regions of the plurality, the calculated rational statistics of a particular region are representative of the particular region, wherein the rational statistics are semi-global characteristics (See at least [0085]-[0093], Claim 1);

quantizing the rational statistics (See at least [0085]-[0093], Claim 1);

watermarking the digital good with the quantized rational statistics of the plurality of the regions, wherein the watermarking comprises embedding a watermark via quantization, whereby the watermarking facilitates protection of the digital good so that the digital good is slightly altered to embed a detectable mark in manner that preserves the perceptual characteristics of the content, the watermark associating the content of the digital good with a producer, provider, content owner, or distributor of the content (See at least [0085]-[0093], Claim 1);

wherein the calculating comprises generating the rational statistics of one or more regions of the plurality via a hashing function, *h,* that hashing function having quotient of two weighted, linear, statistical combinations (See the discussion of claims 4 and 17), and where

$$h_i = \frac{\sum_{j \in R_i} \alpha_{ij} s_j}{\sum_{j \in R_i} b_{ij} s_j}$$

Where:

- $a_{ij}$ is the $j^{th}$ element of $a_i$ and $a_i$ are a pseudo-random generated weight factors;
- $b_{ij}$ is the $j^{th}$ element of $b_i$ and $b_i$ are a pseudo-random generated weight factors;
- s denotes the digital good of dimension $N \times 1$;
- $R_i$ are the plurality of regions, where $R_i \subseteq \{1,2,\ldots,N\}$.

15. **Examiner's Note**: The Examiner has pointed out particular references contained in the prior art of record within the body of this action for the convenience of the applicant. Although the specified citations are representatives of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and

figures may apply. Applicant, in preparing the response, should consider fully the entire reference as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Mr. Dante Ravetti whose telephone number is (571) 270-3609. The examiner can normally be reached on Monday – Thursday 9:00am-5:00pm.

If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Calvin Hewitt may be reached at (571) 272-6709. The fax phone number for the organization where this application or proceeding is assigned is (571) 270-4609.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system see http://pair-direct.uspto.gov. Should you have questions on access to the private PAIR system, please contact the Electronic Business Center (EBC) at 1-(866) 217-9197. If you would like assistance from a USPTO Customer Service

Representative or access to the automated information system, call 1-(800) 786-

9199 (IN USA or CANADA) or 1-(571) 272-1000.

/Dante Ravetti/
Examiner, Art Unit 3685
Wednesday, February 11, 2009

/Calvin L Hewitt II/
Supervisory Patent Examiner, Art Unit 3685